GenCore version 4.5

OM protein - protein search, using sw model

Run on: March 1, 2001, 16:20:13 ; Search time 52.2 Seconds
(without alignments)
26.016 Million cell updates/sec

Title: US-09-331-631A-37
Perfect score: 52
Sequence: 1 CXXXCXXXXXXXXXXCXXXC 20

Scoring table: BLOSUM62DX
Gapop 10.0 , Gapext 0.5

Searched: 195891 seqs, 67900655 residues

Total number of hits satisfying chosen parameters: 195891

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_66:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	52	100.0	43	2	S18173	metallothionein -
2	52	100.0	43	2	S18174	metallothionein -
3	52	100.0	43	2	S33382	metallothionein -
4	52	100.0	47	1	A24074	pyrularia thionin
5	52	100.0	48	2	S29216	neurotoxin Tx2 - s
6	52	100.0	49	2	S29215	neurotoxin Tx2 - s
7	52	100.0	52	2	S65712	metallothionein 1
8	52	100.0	55	2	S25774	testis-specific pr
9	52	100.0	56	1	WTFF	testis-specific pr
10	52	100.0	57	2	A57537	guamerin - Korean
11	52	100.0	60	1	SMHO1A	metallothionein 1A
12	52	100.0	60	2	S30567	metallothionein -
13	52	100.0	60	2	JC2420	metallothionein -
14	52	100.0	60	2	JC2419	metallothionein -
15	52	100.0	60	2	S31723	metallothionein -
16	52	100.0	60	2	B27490	metallothionein B
17	52	100.0	60	2	S38335	metallothionein -
18	52	100.0	61	1	SMHU2	metallothionein 2
19	52	100.0	61	1	SMMK2	metallothionein 2
20	52	100.0	61	1	SMHU1E	metallothionein 1E
21	52	100.0	61	1	SMHU1A	metallothionein 1A
22	52	100.0	61	1	SMHU1B	metallothionein 1B
23	52	100.0	61	1	SMMK1	metallothionein 1
24	52	100.0	61	1	SMHU1F	metallothionein 1F
25	52	100.0	61	1	SMRT2	metallothionein II
26	52	100.0	61	1	SMMS2	metallothionein II
27	52	100.0	61	1	SMHY2C	metallothionein II
28	52	100.0	61	1	SMHOB	metallothionein 1B
29	52	100.0	61	1	SMBO2	metallothionein II
30	52	100.0	61	1	SMHU1G	metallothionein 1G
31	52	100.0	61	1	SMMSI	metallothionein I
32	52	100.0	61	1	SMRT1	metallothionein I
33	52	100.0	61	1	SMHY1C	metallothionein I
34	52	100.0	61	2	S69277	metallothionein 1R
35	52	100.0	61	2	S00808	metallothionein Ia
36	52	100.0	61	2	S00810	metallothionein Ic
37	52	100.0	61	2	A37425	metallothionein 2
38	52	100.0	61	2	S00811	metallothionein II
39	52	100.0	61	2	S00809	metallothionein Ib
40	52	100.0	61	2	A23889	metallothionein 1
41	52	100.0	61	2	B23889	metallothionein 2
42	52	100.0	61	2	A27652	metallothionein IA
43	52	100.0	61	2	S54334	metallothionein-2b
44	52	100.0	61	2	S54332	metallothionein-2D
45	52	100.0	61	2	S54333	metallothionein-2E

ALIGNMENTS

RESULT 1
S18173
metallothionein - common bobwhite (fragment)
C;Species: Colinus virginianus (common bobwhite)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S33378; S18173
R;Shartzer, K.L.; Kage, K.; Sobieski, R.J.; Andrews, G.K.
J. Mol. Evol. 36, 255-262, 1993
A;Title: Evolution of avian metallothionein: DNA sequence analyses of the turkey meta
A;Reference number: S33378; MUID:93247066
A;Accession: S33378
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-43 <SHA>
A;Cross-references: EMBL:X62511; NID:g62749; PIDN:CAA44370.1; PID:g62750
C;Superfamily: metallothionein

Query Match 100.0%; Score 52; DB 2; Length 43;
Best Local Similarity 20.0%; Pred. No. 1.8e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      16 CRKSCCSCCPAGCNNCAKGC 35
```

RESULT 2
S18174
metallothionein - common bobwhite (fragment)
C;Species: Colinus virginianus (common bobwhite)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S33379; S18174
R;Shartzer, K.L.; Kage, K.; Sobieski, R.J.; Andrews, G.K.
J. Mol. Evol. 36, 255-262, 1993
A;Title: Evolution of avian metallothionein: DNA sequence analyses of the turkey meta
A;Reference number: S33378; MUID:93247066
A;Accession: S33379
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-43 <SHA>
A;Cross-references: EMBL:X62512; NID:g62751; PIDN:CAA44371.1; PID:g62752
C;Superfamily: metallothionein

Query Match 100.0%; Score 52; DB 2; Length 43;
Best Local Similarity 20.0%; Pred. No. 1.8e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

```
Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      16 CRKSCCSCCPAGCNNCVKGC 35
```

```
RESULT   3
S33382
metallothionein - ring-necked pheasant (fragment)
C;Species: Phasianus colchicus (ring-necked pheasant)
C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 20-Aug-1999
C;Accession: S33382; S18182
R;Shartzer, K.L.; Kage, K.; Sobieski, R.J.; Andrews, G.K.
J. Mol. Evol. 36, 255-262, 1993
A;Title: Evolution of avian metallothionein: DNA sequence analyses of the turkey metallo
A;Reference number: S33378; MUID:93247066
A;Accession: S33382
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-43 <SHA>
A;Cross-references: EMBL:X62510; NID:g64214; PIDN:CAA44369.1; PID:g64215
C;Superfamily: metallothionein

  Query Match            100.0%;  Score 52;  DB 2;  Length 43;
  Best Local Similarity   20.0%;  Pred. No. 1.8e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      16 CRKSCCSCCPAGCNNCAKGC 35


RESULT   4
A24074
pyrularia thionin - oil nut
C;Species: Pyrularia pubera (oil nut, buffalo nut)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A24074
R;Vernon, L.P.; Evett, G.E.; Zeikus, R.D.; Gray, W.R.
Arch. Biochem. Biophys. 238, 18-29, 1985
A;Title: A toxic thionin from Pyrularia pubera: purification, properties, and amino acid
A;Reference number: A24074; MUID:85173323
A;Accession: A24074
A;Molecule type: protein
A;Residues: 1-47 <VER>
C;Superfamily: viscotoxin

  Query Match            100.0%;  Score 52;  DB 1;  Length 47;
  Best Local Similarity   20.0%;  Pred. No. 1.8e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      12 CYNVCRLPGTISREICAKKC 31


RESULT   5
S29216
neurotoxin Tx2 - spider (Phoneutria nigriventer)
C;Species: Phoneutria nigriventer
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 07-May-1999
C;Accession: S29216
R;do Nascimento Cordeiro, M.; Ribeiro Diniz, C.; do Carmo Valentim, A.; von Eickstedt, V
FEBS Lett. 310, 153-156, 1992
A;Title: The purification and amino acid sequences of four Tx2 neurotoxins from the venc
A;Reference number: S29214; MUID:93011905
A;Accession: S29216
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-48 <COR>
C;Superfamily: curtatoxin

  Query Match            100.0%;  Score 52;  DB 2;  Length 48;
  Best Local Similarity   20.0%;  Pred. No. 1.9e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      10 CKETCDCCGERGECVCGGPC 29


RESULT   6
S29215
neurotoxin Tx2 - spider (Phoneutria nigriventer)
C;Species: Phoneutria nigriventer
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 15-Oct-1999
C;Accession: S29215; B39305
R;do Nascimento Cordeiro, M.; Ribeiro Diniz, C.; do Carmo Valentim, A.; von Eickstedt
FEBS Lett. 310, 153-156, 1992
A;Title: The purification and amino acid sequences of four Tx2 neurotoxins from the v
A;Reference number: S29214; MUID:93011905
A;Accession: S29215
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-49 <COR>
R;Rezende Jr., L.; Cordeiro, M.N.; Oliveira, E.B.; Diniz, C.R.
Toxicon 29, 1225-1233, 1991
A;Title: Isolation of neurotoxic peptides from the venom of the 'armed' spider Phoneu
A;Reference number: A39305; MUID:92196803
A;Accession: B39305
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-11 <REZ>
C;Superfamily: curtatoxin
C;Keywords: neurotoxin; venom

  Query Match            100.0%;  Score 52;  DB 2;  Length 49;
  Best Local Similarity   20.0%;  Pred. No. 1.9e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      10 CKVTCDCCGERGECVCGGPC 29


RESULT   7
S65712
metallothionein-1 - rat (fragments)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 06-Dec-1996 #sequence_revision 13-Mar-1997 #text_change 09-May-1997
C;Accession: S65712
R;Saito, S.; Hunziker, P.E.
Biochim. Biophys. Acta 1289, 65-70, 1996
A;Title: Differential sensitivity of metallothionein-1 and -2 in liver of zinc-inject
A;Reference number: S65712; MUID:96195842
A;Accession: S65712
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-23;24-46;47-52 <SAI>
C;Superfamily: metallothionein
C;Keywords: blocked amino end

  Query Match            100.0%;  Score 52;  DB 2;  Length 52;
  Best Local Similarity   20.0%;  Pred. No. 1.9e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXCXXXC 20
           |:::|:::::::::::|:::|
Db      22 CKKSCCSCCPVGCSKCAQGC 41


RESULT   8
S25774
testis-specific protein Mst84Dc - fruit fly (Drosophila melanogaster)
C;Species: Drosophila melanogaster
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C;Date: 26-Jul-1996 #sequence_revision 26-Jul-1996 #text_change 20-Aug-1999
C;Accession: S25774; C56565
R;Kuhn, R.; Kuhn, C.; Boersch, D.; Glaetzer, K.H.; Schaefer, U.; Schaefer, M.
Mech. Dev. 35, 143-151, 1991
A;Title: A cluster of four genes selectively expressed in the male germ line of Drosophi
A;Reference number: A56565; MUID:92102953
A;Accession: S25774
A;Molecule type: DNA
A;Residues: 1-55 <KUH>
A;Cross-references: EMBL:X67703; NID:g11072; PIDN:CAA47939.1; PID:g11075
A;Note: the authors translated the codon TGC for residue 55 as Thr
A;Note: sequence extracted from NCBI backbone (NCBIN:74217, NCBIP:74222)
C;Genetics:
A;Gene: Mst84Dc
A;Cross-references: FlyBase:FBgn0004174
A;Map position: 3
C;Superfamily: fruit fly testis-specific protein
C;Keywords: spermatogenesis; tandem repeat


  Query Match             100.0%;  Score 52;  DB 2;  Length 55;
  Best Local Similarity   20.0%;  Pred. No. 2e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      14 CCGPCCGPCGPRCGPCGSCC 33


RESULT   9
WTFF
testis-specific protein (clone mst(3)gl-9) - fruit fly (Drosophila melanogaster)
C;Species: Drosophila melanogaster
C;Date: 30-Sep-1990 #sequence_revision 30-Sep-1990 #text_change 22-Jun-1999
C;Accession: S00340
R;Kuhn, R.; Schaefer, U.; Schaefer, M.
EMBO J. 7, 447-454, 1988
A;Title: Cis-acting regions sufficient for spermatocyte-specific transcriptional and spe
A;Reference number: S00340; MUID:88211557
A;Accession: S00340
A;Molecule type: DNA
A;Residues: 1-56 <KUH>
A;Cross-references: EMBL:Y00831; NID:g8650; PIDN:CAA68761.1; PID:g8651
C;Genetics:
A;Gene: FlyBase:Mst87F
A;Cross-references: FlyBase:FBgn0002862
C;Superfamily: fruit fly testis-specific protein
C;Keywords: sex-specific protein; testis


  Query Match             100.0%;  Score 52;  DB 1;  Length 56;
  Best Local Similarity   20.0%;  Pred. No. 2e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db       2 CCGPCGPCCGPCCGPCCGPC 21


RESULT  10
A57537
guamerin - Korean leech
C;Species: Hirudo nipponia (Korean leech)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 19-Dec-1997
C;Accession: A57537
R;Jung, H.I.; Kim, S.I.; Ha, K.S.; Joe, C.O.; Kang, K.W.
J. Biol. Chem. 270, 13879-13884, 1995
A;Title: Isolation and characterization of guamerin, a new human leukocyte elastase inhi
A;Reference number: A57537; MUID:95293987
A;Accession: A57537
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-57 <JUN>


  Query Match             100.0%;  Score 52;  DB 2;  Length 57;
  Best Local Similarity   20.0%;  Pred. No. 2e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      35 CMIFCPNGFKVDENGCEYPC 54


RESULT  11
SMHO1A
metallothionein 1A - horse
C;Species: Equus caballus (domestic horse)
C;Date: 31-May-1979 #sequence_revision 31-May-1979 #text_change 13-Sep-1996
C;Accession: A03277
R;Kojima, Y.; Kagi, J.H.R.
Trends Biochem. Sci. 3, 90-93, 1978
A;Title: Metallothionein.
A;Reference number: A03277
A;Accession: A03277
A;Molecule type: protein
A;Residues: 1-60 <KOJ>
A;Experimental source: liver and kidney
A;Note: both Ser and Leu occur at position 54
C;Superfamily: metallothionein
C;Keywords: acetylated amino end; metal binding
F;1/Modified site: acetylated amino end (Met) #status experimental
F;5,7,13,15,19,21,24,26,29/Binding site: transition metal ions (Cys) #status predicte
F;33,34,36,37,41,44,48,50,57,59/Binding site: transition metal ions (Cys) #status pre


  Query Match             100.0%;  Score 52;  DB 1;  Length 60;
  Best Local Similarity   20.0%;  Pred. No. 2.1e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      29 CKKSCCSCCPGGCARCAQGC 48


RESULT  12
S30567
metallothionein - plaice
C;Species: Pleuronectes platessa (plaice)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S30567
R;Leaver, M.J.; George, S.G.
submitted to the EMBL Data Library, November 1990
A;Reference number: S30567
A;Accession: S30567
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-60 <LEA>
A;Cross-references: EMBL:X56743; NID:g64237; PIDN:CAA40067.1; PID:g64238
C;Superfamily: metallothionein


  Query Match             100.0%;  Score 52;  DB 2;  Length 60;
  Best Local Similarity   20.0%;  Pred. No. 2.1e+02;
  Matches    4;  Conservative   16;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 20
           |:::|::::::::::|:::|
Db      28 CNKSCCPCCPSGCPKCASGC 47


RESULT  13
JC2420
metallothionein - Mozambique tilapia
C;Species: Tilapia mossambica, Oreochromis mossambicus (Mozambique tilapia)
C;Date: 21-Feb-1995 #sequence_revision 05-Apr-1995 #text_change 20-Aug-1999
```

C;Accession: JC2420
R;Chan, K.M.
Biochem. Biophys. Res. Commun. 205, 368-374, 1994
A;Title: PCR-cloning of goldfish and Tilapia metallothionein complementary DNAs.
A;Reference number: JC2419; MUID:95091751
A;Accession: JC2420
A;Molecule type: mRNA
A;Residues: 1-60 <CHA>
A;Cross-references: GB:S75042; NID:g802155; PIDN:AAB32778.1; PID:g802156
C;Comment: The protein belongs to a metallothionin family of low molecular weight and cy
C;Superfamily: metallothionein
C;Keywords: metalloprotein

Query Match 100.0%; Score 52; DB 2; Length 60;
Best Local Similarity 20.0%; Pred. No. 2.1e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXCXXXC 20
|:::|:::::::::::|:::|
Db 28 CKKSCCDCCPSGCSKCASGC 47

RESULT 14
JC2419
metallothionein - goldfish
C;Species: Carassius auratus (goldfish)
C;Date: 21-Feb-1995 #sequence_revision 05-Apr-1995 #text_change 20-Aug-1999
C;Accession: JC2419
R;Chan, K.M.
Biochem. Biophys. Res. Commun. 205, 368-374, 1994
A;Title: PCR-cloning of goldfish and Tilapia metallothionein complementary DNAs.
A;Reference number: JC2419; MUID:95091751
A;Accession: JC2419
A;Molecule type: mRNA
A;Residues: 1-60 <CHA>
A;Cross-references: GB:S75039; NID:g802153; PIDN:AAB32777.1; PID:g802154
C;Superfamily: metallothionein

Query Match 100.0%; Score 52; DB 2; Length 60;
Best Local Similarity 20.0%; Pred. No. 2.1e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXCXXXC 20
|:::|:::::::::::|:::|
Db 28 CKKSCCFCCPSGCSKCASGC 47

RESULT 15
S31723
metallothionein - northern pike
C;Species: Esox lucius (northern pike)
C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 20-Aug-1999
C;Accession: S38334; S17175; S15503; S31723
R;Kille, P.; Kay, J.; Sweeney, G.E.
Biochim. Biophys. Acta 1216, 55-64, 1993
A;Title: Analysis of regulatory elements flanking metallothionein genes in Cd-tolerant f
A;Reference number: S38334; MUID:94032489
A;Accession: S38334
A;Molecule type: DNA
A;Residues: 1-60 <KI3>
A;Cross-references: EMBL:X70042; NID:g62782; PIDN:CAA49636.1; PID:g62783
A;Note: the authors translated the codon ACT for residue 9 as Ser
R;Kille, P.; Stephens, P.E.; Kay, J.
Biochim. Biophys. Acta 1089, 407-410, 1991
A;Title: Elucidation of cDNA sequences for metallothioneins from rainbow trout, stone lo
A;Reference number: S16996; MUID:91316146
A;Accession: S17175
A;Molecule type: mRNA
A;Residues: 1-60 <KIL>
A;Cross-references: EMBL:X59392; NID:g62780; PIDN:CAA42035.1; PID:g62781
C;Genetics:
A;Introns: 9/1; 31/1
C;Superfamily: metallothionein
C;Keywords: chelation; metal binding; metal-thiolate cluster

Query Match 100.0%; Score 52; DB 2; Length 60;
Best Local Similarity 20.0%; Pred. No. 2.1e+02;
Matches 4; Conservative 16; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXCXXXC 20
|:::|:::::::::::|:::|
Db 28 CKKSCCSCCPSGCSKCASGC 47

Search completed: March 1, 2001, 16:20:13
Job time: 321 sec